REMARKS

This is in response to the final Office Action mailed September 2, 2003. This amendment is submitted with a Request for Continued Examination ("RCE"), which removes the finality of the Office Action. A supplemental Information Disclosure Statement is also submitted herewith.

It is noted that the status of the present Office Action as "final" is objected to. The present rejections are unrelated to those previously issued. No amendment was made to necessitate the new rejections. Therefore, the Office Action should not have been classified as "final". It is recognized that this response is being filed with an RCE, which renders this objection moot. However, a further "final" rejection is not appropriate after the present response.

Claims 1–22 and 26-28 are pending in the application. Claims 23-25 have been cancelled without prejudice to representing those claims in a divisional application. Claim 28 has been added. The application now includes four independent claims and 25 total claims. There is no fee believed to be due for the new claim because the fees for one independent claim in excess of three and seven total claims in excess of twenty have already been paid. However, if any fee is found to be in connection with this submission, authorization is provided to charge the fee, or to credit any over-payment, to deposit account 50-0573.

ARGUMENTS

Rejections under 35 USC § 103

Claims 1, 2, 4-18 and 20-22 have been rejected as allegedly obvious over the combination of U.S. Pat No. 5,478,643 to Peiffer *et al.*, U.S. Pat. No. 4,177,310 to Steeves, U.S. Pat. No. 6,045,654 to Kjelgaard and U.S. Pat. No. 6,228,486 to Kittel *et al.* Claims 3 and 19 have been rejected over the references in further combination with U.S. Pat. No. 5,783,266 to Gehrke. Peiffer and Steeves have been principally relied upon in rejecting independent claims 1 and 13, while Kjelgaard and Kittel are believed to have been cited in relation to several elements recited in the dependent claims.

The Office Action characterizes Peiffer as a matte transfer metallization film for chewing gum with the structure of, in order, *a polymer film, a metal foil, a polymer/adhesive layer and a paper support*. The Examiner has noted that Peiffer does not describe an electron cured layer over a paper layer. However, the Office Action argues that it would have been obvious to provide an electron beam cured layer in light of Steeves.

It is respectfully submitted that there is no suggestion in the art of record to combine Steeves with Peiffer. In addition, even if the combination were made, all of the elements of the present claims are still not suggested or disclosed.

No Suggestion to Combine Peiffer with Steeves

Peiffer describes a reusable matte transfer metallization film for transferring a metallized layer (a thin metal layer that has been applied to the film by vapor deposition) onto a support of paper, board or glass. In order to accomplish this, an adhesive is applied over the metal or onto the support, and the metal layer and support are brought into contact. The transfer film is removed after the adhesive cures to provide a metallized layer on the support. The transfer film is used to provide a metal surface with a uniform matte sheen on a support that otherwise could not be directly metallized to provide those characteristics. The process of Peiffer results in a metallized layer adhered to the support with an adhesive.

Steeves describes another way of metallizing paper. According to Steeves, a coating is applied to the paper and cured with an electron beam to provide a smooth and uninterrupted resin film. This smooth resin film allegedly may, unlike rough-surfaced paper, be metallized to provide a smooth metallic surface. (*See* column 1, lines 20-23, column 2, lines 34-36.)

Both Peiffer and Steeves address the problem of how to metallize a paper substrate. However, the approaches employed by the references are far different and would not be used in conjunction with one another. There is no reason for one skilled in the art to adopt both approaches at the same time or combine one with the other, because any attempt to do so would result in a paper substrate that has been metallized twice.

This is contrary to the argument set forth on page 3, lines 4-7, of the Office Action. There, the Examiner has taken the position that it would be obvious to modify Peiffer to provide a smooth surface as taught by Steeves. The reason Steeves desires to provide the smooth surface

is to render the substrate receptive to a metallized layer for attaining a smooth metallic surface. However, if one went to the effort of following the technique of Peiffer (metallizing a transfer film, applying adhesive, contacting the support, waiting for the adhesive to cure and then removing the transfer film), one would already have the desired metallized product. There would be no need to coat and cure the electron beam cured layer of Steeves to attain the smooth metallized surface.

The Combination of Peiffer and Steeves does not show all of the Elements recited in the Claims

Claim 1 recites a gum packaging laminate comprising, in order, *a metal foil, a polymer layer, a paper layer and an electron beam cured layer*. Neither Peiffer nor Steeves describes a metal foil. As noted above, Peiffer describes a metallized layer that has been adhered to a support through an adhesive transfer process. The metallized layer is not a foil, and the two are distinct in the art. If it were a foil, there would be no need for Peiffer's precursor step of first vacuum depositing the metal onto transfer film. Foil could instead be directly laminated to the support. The metallized structure of Steeves also does not include a foil. (*See*, column 5, lines 23-29, contrasting the structure with a foil/paper laminate.)

The combination of Peiffer and Steeves also does not show a polymer layer disposed between a paper layer and a metal foil. Although Steeves shows an electron cured polymer layer between a paper substrate and a metallized layer (not a foil), the Examiner has considered the electron cured polymer to be the fourth element of the present claim 1. The electron beam cured polymer of Steeves cannot be considered to show, at the same time, both the polymer layer on one side of the paper and the electron beam cured layer on the other side of the paper as recited in claim 1. Peiffer merely shows an adhesive disposed between a metallized layer (again, not a foil) and a support. Thus, neither reference shows a polymer disposed between a foil and paper.

Because there exists no motivation to combine Peiffer and Steeves, and because these references do not show all of the elements of claim 1 even if combined, the claim is patentable over these references whether taken alone or in combination. The Kjelgaard and Kittel references are cited with regard to various elements recited in the dependent claims. Regardless of their individual merits, because there are elements in the independent claim that are not shown

or suggested by the cited references, as explained above, dependent claims 2-12 are also allowable.

Independent claim 13 is directed to a gum package formed from a laminate having layers in the following order: *a polymer layer, an inorganic layer, a bonding layer, a paper layer and an electron beam cured coating.* With regard to claim 13, the Office Action cites an intermediate structure shown in Peiffer, which is temporarily formed during the transfer metallization process, as the basis of the rejection. The intermediate structure is formed only temporarily and has a construction of *transfer film, metallized layer, adhesive, support.* After the adhesive has cured, the transfer film is removed to provide the final structure *metallized layer, adhesive, support.*

Noting that Peiffer does not describe an electron beam cured layer, the Office Action relies upon Steeves with regard to that element of claim 13. For the reasons set forth above, one skilled in the art would find no suggestion or motivation to combine these references. However, even if they were to be combined, one would utilize the final structure of Peiffer, not the intermediate structure. Again, the purpose of the Peiffer transfer metallization process is to produce a support with a metallic surface having a uniform matte sheen. Thus, the combined structure would be *metallized layer, adhesive, support, electron beam cured layer and metallized layer*, which includes two metallized layers and no polymer layer on the side of either of the metallized layers opposite a paper layer.

If one were to instead combine the intermediate structure of Peiffer with Steeves as suggested in the Office Action, the resulting combination would include a polymer layer on the side of a metallized layer opposite the paper, in which the polymer layer is only weekly adhered to the metallized layer. This is because the transfer film (the polymer layer) of Peiffer is specifically designed to have good release characteristics with regard to the metallized layer being transferred. In fact, the transfer film includes migratory slip additives to provide dehesive action to reduce the adhesion of ink and metal. (*See* column 6, lines 10-18.) Such a weekly adhered polymer layer would obviously lead to delamination problems and would not be suitable in a gum wrapper.

For the reasons set forth above, it is also believed that independent claim 13 and dependent claims 14-22 are patentable over the references cited.

Claims 26 and 27 have also been rejected as allegedly obvious over the combination of Peiffer and Steeves. In this regard, the Examiner has taken the position that Steeves shows a gas barrier layer. Both Steeves and Peiffer describe a metallized layer, which could be a gas barrier layer. Claim 26 has been amended to also recite wax for sealing the gum wrapper. Neither Steeves nor Peiffer, whether alone or in combination, show or suggest wax disposed on an electron beam cured coating having fixed processing additives that will not interfere with the sealing ability of the wax. For at least this reason, claims 26 and 27 are believed to be allowable over the Steeves and Peiffer combination.

The Office Action addresses wax with regard to claims 2 and 20, indicating that Kittel suggests a wax layer coated over an electron beam cured layer. At column 10, line 24, Kittel states that a radiation curable coating can contain wetting agents, leveling agents, waxes, slip aids and light stabilizers. In this regard, a small amount of wax would be added to the coating before it is cured. Kittel says nothing about depositing wax over a radiation cured coating after it is cured, let alone providing a wax in a quantity or location suitable for sealing a gum wrapper.

The mere indication that wax can be a constituent of a coating would provide no suggestion that wax could be disposed as a distinct layer over the coating for sealing a gum wrapper. (*See*, *Ex parte Bader*, (Bd. Pat. App. & Int. 2002) (unpublished), copy provided and posted on the Internet at http://www.uspto.gov/web/offices/dcom/bpai/decisions/fd980119.pdf -- concluding that one skilled in the art cannot substitute one material for another with a reasonable expectation of success in obtaining a laminate film having predictable layer interactions and ultimate film performance.) The rejection of claims 2 and 20 should be withdrawn (and this rejection should not be repeated with regard to amended claims 26 and 27).

In addition, if the rejection based on Kittel is not withdrawn, an explanation is requested as to how Kittel (describing a thermal transfer laminate for providing printed indicia on the interior of an automobile or the like) could be considered analogous art to the present invention.

Rejections under 35 USC §§ 102/103

Claims 26 and 27 have also been rejected as anticipated by or obvious over U.S. Pat. No. 6,010,757 to Yamamoto *et al.* Yamamoto describes a surface coating composition that can be applied to a resin or paper base layer (or a variety of other materials). Once the coating is applied, it is "dried and cured" (*see* col. 12, line 17) to allegedly provide gas barrier properties, transparency and flexibility. Yamamoto further indicates that a layer of aluminum or a metal oxide (inorganic layer) can be metallized/deposited over the coating (see col. 12, lines 35-46). Yamamoto indicates that a thermoplastic resin can be laminated onto the coating or metallized layer. The patent states that corona treatment can be used as a surface treatment to firmly adhere the thermoplastic resin layer.

The Office Action indicates that Yamamoto discloses, or alternatively renders obvious, the structure of claim 26, which is directed to a gum package having a *paper layer, a gas barrier layer and an electron beam cured coating on the paper layer*. With regard to the electron beam cured layer, the Examiner has taken the position that the corona surface treatment described in Yamamoto is the equivalent of electron beam curing.

The characterization of an electron beam cured coating as an equivalent to a corona treated substrate is respectfully traversed. Corona treatment is a process in which a substrate is passed over a grounded roller and a charged electrode discharges electricity onto the substrate to alter the surface. The electricity can burn contaminants and otherwise clean and enhance the surface of the substrate. The discharge oxidizes and activates the surface for printing, lamination or metallizing. High voltage and very low current is involved in corona discharge. The corona process results in a substrate with an enhanced surface, but which is otherwise substantially unchanged.

Electron beam curing, on the other hand, operates at a much higher power (for example, about 3 megarads or more involving energy of about 125keV or more) in which a cloud of electrons are produced from a tungsten element in a vacuum chamber. The electrons are accelerated at high speed through a titanium foil via a large potential difference. The accelerated electrons have enough energy to break a carbon/carbon double bond and polymerize a liquid coating made up of monomers and oligomers. Electron beam curing creates solid coatings from

liquid coatings through free radical polymerization and cross-linking. (*See*, for example, page 5, line 3 – page 6, line 16 of the specification.) Free radical polymerization can only be achieved if the electrons are accelerated by a power supply that is much more powerful than is available in corona discharge. The result of the electron beam curing process is a polymerized/cross-linked solid coating.

The differences between a corona treated substrate and an electron beam cured coating having been made clear, it is respectfully submitted that the rejection based on Yamamoto should be withdrawn.

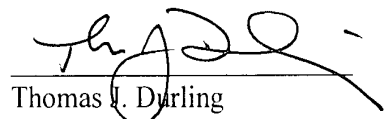
New Claim

New claim 28 has been added to the application. The claim includes subject matter similar to that of original claims 1, 2 and 12, and should not necessitate a new search by the Examiner. Support for the new claim can be found in the specification for example, at page 5, lines 15–28 and page 6, lines 17-22. The new claim does not add new matter to the application. For many of the reasons already set forth above, the references of record do not suggest or disclose a gum package counterband as recited in the claim.

It is requested that all of the objections and rejections set forth in the last Office Action be reconsidered and withdrawn. If direct communication will expedite the allowance of the application, the Examiner is invited to telephone the undersigned attorney.

Respectfully submitted,

SCOTT W. HUFFER, *ET AL.*

BY: 

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